SOUTHWEST FISHERIES SCIENCE CENTER
FOURTH QUARTER REPORT-FY 2002
For the Period July 1 - September 30, 2002

Submitted by: John Hunter, Division Director, Fisheries Resources Division

Title of Accomplishment or Milestone: Analysis of essential squid spawning habitat.

Current Status: On going.

Background Information: The market squid, *Loligo opalescens*, is the basis of the largest and most valuable fishery in California. World market demand has increased the intensity of this fishery in recent years. Management has been difficult because the short life span of squid preclude the application of traditional management methods. The fishery is prosecuted on the spawning grounds by light boats which attract squid and by seiners which capture the squid. Bycatch of squid eggs during the fishing process may negatively impact future catches.

Purpose of Activity: To investigate habitat preference and depth distribution of squid egg beds and possible differences in feeding with predatory size, season, and geographic area.

Description of Accomplishment and Significant Results: Results indicate that squid eggs are deposited primarily on muddy sand bottom around offshore islands and at selected sites on the mainland coast. Egg beds were found between 30 and 80 m in Southern California during the winter fishery and between 20 and 40 m in Monterey Bay during the summer fishery.

Significance of Accomplishment: All of the eggs are vulnerable to fishing gear since the average depth of the nets is 48 m and the max is 81m. Squid eggs were also found on hard bottom on offshore banks during summer in Southern California. This was an important finding since the life span of squid is only 8 to 10 months and the source of the recruits for the winter fishery has been in question.

Problems: Squid eggs exhibit extreme contagion. Densities may exceed 2500 egg capsules per m2. Because of this contagion, estimating the population of eggs on the spawning grounds is difficult. We are developing an adaptive sampling design that will facilitate future research.

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